

REMARKS/ARGUMENTS

Favorable reconsideration of this application in light of the following discussion is respectfully requested.

Claims 1-14 and 17-21 are pending, with Claims 6, 7, 13 and 14 withdrawn from consideration. Claims 1, 8, 20 and 21 are amended without introducing any new matter. In particular, Claims 1, 8, 20 and 21 are amended as suggested by a Supervisory Patent Examiner (SPE) Barr and Examiner Golightly during the personal interview of June 10, 2009. As indicated on the Interview Summary, it was agreed that these amendments would be entered after final. Accordingly, it is respectfully requested that the present amendment be entered.

The Office Action rejected Claims 1-5, 8-12 and 17-21 under 35 U.S.C. §103(a) as unpatentable over Tsukazaki (U.S. Patent No. 5,837,094) in view of Leon (U.S. Patent No. 5,152,172).

Applicants acknowledge with appreciation the courtesy of Examiners Barr and Golightly in conducting a personal interview with Applicants' representative on June 10, 2009. The substance of the interview is summarized hereinafter, and also on the Interview Summary. During the interview, it was agreed that the rejection based on the combination of Tsukazaki and Leon is improper. In addition, Examiners Barr and Golightly suggested amending the independent claims to clarify that the operating state detector detects the effects of collisions between a gas and the rotor blades of the exhauster. Accordingly, the independent claims are amended to include this clarification.

It is respectfully requested the rejection based on Tsukazaki and Leon be withdrawn.

Independent Claim 1 recites a substrate processing unit that includes a processing vessel, a cleaning gas supply system, an exhauster, an operating state detector, and an end point detector. The exhauster includes rotor blades that exhaust the interior of the processing vessel by rotation of the rotor blades. Amended Claim 1 clarifies that the operating state detector detects effects of collisions between a gas and a rotor blade so as to determine a change in an amount of or a molecular weight of the gas that passes through the exhauster.

Turning to the applied references, the Office Action acknowledges that Tsukazaki “does not explicitly teach that it is capable of detecting a change in an amount of or a molecular weight of a gas that collides with the rotor blades.”¹ The Office Action alleges Leon cures the deficiencies in Tsukazaki. However, as discussed during the personal interview, the combination of Tsukazaki with Leon is improper.

Tsukazaki relates to a semiconductor manufacturing apparatus that includes an end point detection controller and a particle monitor that includes a laser radiation system.² By contrast, Leon relates to monitoring the vibration of turbine blades in an operating turbine. As discussed in the personal interview, the device in Leon is directed to an entirely different field of endeavor from that of either the present invention or Tsukazaki.

Moreover, even the combined teachings of Tsukazaki and Leon fail to disclose or suggest all the features recited in Claim 1. As discussed at column 5, line 39 to column 6, line 3 of Leon, the acoustic sensors 76 and 77 measure rotational speeds of blades in the turbine using a Doppler effect. Specifically, Leon describes order-related acoustic signals due to non-uniform blade wake caused by uneven spacing of the blades about a shaft or due

¹ See the outstanding Office Action at page 3, lines 20-22.

² See Tsukazaki, at column 5, lines 53-64.

to an individual resonantly vibrating blade of a blade group that is excited into resonance by a steam discharging nozzle; and non-order-related acoustic signals that may occur due to background noise of steam passing through the turbine or due to non-resonant vibrations of individual blades or blade groups at the natural frequency of the blade. As such, these acoustic signals could be generated without a change in the amount of or the molecular weight of gas that collides with the rotor blades. Thus, Leon fails to disclose an operating stated detector that detects effects of collisions between a gas and rotor blades of an exhauster so as to determine a change in an amount of or a molecular weight of the gas that passes through the exhauster.

Accordingly, even the combined teachings of Tsukazaki and Leon fail to disclose or suggest all the features recited in independent Claim 1. It is submitted independent Claim 1 and the claims depending therefrom are in condition for allowance.

Although differing in scope, independent Claims 8, 20 and 21 recite similar features to those discussed above with respect to independent Claim 1. Accordingly, Claims 8, 20, 21 and the claims depending therefrom are believed to be in condition for allowance for at least the same reasons as those discussed above with respect to independent Claim 1.

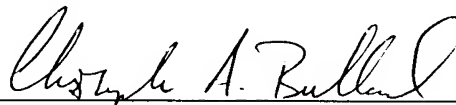
With regard to withdrawn Claims 6, 7, 13 and 14, it is respectfully requested that these claims be rejoined and allowed in accordance with M.P.E.P. §821.04, as Claims 6 and 7 include the subject matter recited in Claim 1, which is believed to be allowable, and as Claims 13 and 14 include the subject matter recited in Claim 8, which is believed to be allowable.

For the reasons discussed above, no further issues are believed to be outstanding in the present application, and the present application is believed to be in condition for formal allowance. Therefore, a notice of allowance for Claims 1-14 and 17-21 is earnestly solicited.

Should the Examiner deem that any further action is necessary to place this application in even better form for allowance, the Examiner is encouraged to contact Applicants' undersigned representative at the below-listed telephone number.

Respectfully submitted,

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